



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/879,322	06/20/1997	ALLAN S. HODGSON	14136	9388

7590 11/27/2001

RAYMOND M. MEHLET
COOK, ALEX, McFARRON, MANZO, CUMMINGS & MEHLER.
200 W. ADAMS, SUITE 2850
CHICAGO, IL 60606

EXAMINER

DASTOURI, MEHRDAD

ART UNIT	PAPER NUMBER
----------	--------------

2623

DATE MAILED: 11/27/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

08/879,322

Applicant(s)

Hodgson et al

Examiner

Mehrdad Dastouri

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE Three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on Sep 17, 2001

2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-10 and 12-20 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-10 and 12-20 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____.
- ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

20) ☐ Other:

Art Unit: 2623

DETAILED ACTION

Continued Examination Under 37 CFR 1.114 After Final Rejection

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 15, 2001 has been entered.

Response to Amendment

2. Applicants' amendment filed, August 15, 2001, has been entered and made of record.
3. Applicants' arguments regarding withdrawal of the finality of Office Action (Paper No. 25) is moot in view of Applicants Request for Continued Examination filed on September 17, 2001.
4. Applicants' arguments with regards to Claims 1-10 and 12 have been fully considered, but they are not persuasive. Applicants argue in essence that background of the instant application does not disclose the amended independent claims limitations concerning measurement of fruit particles in a matrix without removing the fruit particles from the matrix. The Examiner disagrees and indicates that the instant application background (Page 2, Lines 3-14) clearly teaches this limitation. The recited part of the background discloses using computers to measure particle size, shape and area by analyzing images by computer software against a predetermined criteria. As disclosed in the quoted section of the background, the measurement has been performed in

Art Unit: 2623

different areas including measurement and analysis of **cooked fruit pieces containing food products**, or fruit particles in a matrix. In the recited section of background, measurement and analysis have been performed on the **cooked fruit pieces containing food products**. There is no indication of removing fruit pieces from food products.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3-6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Queisser et al (U.S. 5,818,953) in view of the background of the instant application.

Regarding Claim 1, Queisser et al disclose an apparatus for measurement of the fruit particles comprising:

a substantially opaque cabinet (Figure 1; Column 3, Lines 63-67, Column 4, Lines 1-3); a sample tray adapted to receive a fruit particle (Figure 1; Column 5, Lines 34-41. The inspection tray serves as a container for receiving fruit particles); a camera in the upper portion of said cabinet for taking an image of the fruit particles (Figure 1; Column 4, Lines 14-16); a light source in said cabinet (Figure 1; Column 4, Lines 21-22); and a computer with image analyzing software (Figure 2; Column 4, Lines 27-67, Column 5, Lines 1-11). Queisser et al do not disclose the sample tray

Art Unit: 2623

adapted to receive a fruit matrix selected from a starch matrix or a sugar matrix, said fruit matrix used in fruit fillings or cooked food products. Measurement of the fruit particles in a matrix without removing the fruit particles from the matrix is well known in the art as disclosed in the instant application background (Page 2, Lines 3-14. The measurement has been performed for inspecting cooked fruit pieces containing food products, i.e., fruit particles in a matrix.). As indicated in the recited section of the background, camera and computer with analyzing software has been utilized for measurement of the fruit pieces containing in food products without having removed the particles from the matrix. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Queisser et al invention in accordance with the well known teachings of the background of the instant invention for taking an image of fruit particles and analyzing the image while the fruit particles are remaining within the fruit matrix, wherein the fruit matrix is selected from a matrix used in fruit fillings, toppings, dairy products or cooked food products because it will expand the field of measurement to encompass a large variety of food products by merely utilizing a conventional method of measurement routinely implemented in the art.

Regarding Claim 3, Queisser et al further disclose an apparatus for measurement of the fruit particles in a matrix wherein the light source comprises an incident light source within the cabinet ((Figure 1; Column 4, Lines 21-22).

Regarding Claim 4, Queisser et al do not specifically disclose the apparatus of Claim 1 wherein the light source comprises switches for adjusting the intensity of the light. Light sources

Art Unit: 2623

are inherently incorporated with switches for turning the lights on and off. Alternatively, utilizing switches for adjusting the intensity of a light in a predetermined range is extremely well known in the art (Official Notice.). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Queisser et al invention to provide an apparatus for measurement of the fruit particles in a matrix wherein the light source comprises switches for adjusting the intensity of the light because it will provide the capability of obtaining different images of samples under various illumination conditions for enhancing image quality and increasing measurement accuracy.

Regarding Claim 5, Queisser et al disclose the apparatus of Claim 1 wherein the light source comprises multiple light-producing sources (Figure 1; Column 5, Lines 52-57). Queisser et al do not explicitly disclose the apparatus of Claim 1 comprising independently-adjustable light-producing sources. Light sources are inherently incorporated with switches for turning the lights on and off. Alternatively, utilizing switches for adjusting the intensity of lights in a predetermined range is extremely well known in the art (Official Notice.). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Queisser et al invention to provide an apparatus for measurement of the fruit particles in a matrix wherein the light source comprises switches for adjusting the intensity of the light because it will provide the capability of obtaining different images of samples under various illumination conditions for enhancing image quality.

Art Unit: 2623

Regarding Claim 6, Queisser et al do not explicitly disclose the apparatus of Claim 1 wherein the inside of the cabinet is non-reflecting. Characteristics of the inside surface of a cabinet is the decision based upon designer's preference. Appropriate painting of the inside of a cabinet will result in a non-reflecting surface routinely practiced in the art (Official Notice). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Queisser et al invention to provide a cabinet with non-reflecting inside surface because it will minimize light scattering inside the cabinet and will prevent degrading of the image quality due to light scattering.

With regards to Claim 12, arguments analogous to those presented for Claim 1 are applicable to Claim 12. Queisser et al further disclose illuminating the food particles so that an image may be obtained in which food particles are distinguishable from the background (Column 5, Lines 50-65); capturing a computer-readable image of at least a portion of said illuminating fruit particles (Figure 3, Step 70); and using a computer and an image analyzing software program to analyze said image and obtain information concerning said fruit particles (Figures 2 and 3; Column 13, Lines 4-60, Column 14, Lines 1-8).

7. Claims 2, 7-10, 13, 14, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable by Queisser et al (U.S. 5,818,953) further in view of the background of the instant application and Bolle et al (U.S. 5,546,475).

Regarding Claim 2, Queisser et al do not disclose the apparatus of Claim 1 wherein said light source comprises a light box in the lower portion of said cabinet. Bolle et al disclose a

Art Unit: 2623

produce recognition system wherein the light source comprises a light box in the lower portion of the cabinet (Figure 4; Column 9, Lines 29-50). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Queisser et al invention according to the teachings of Bolle et al to provide a light box in the lower portion of the cabinet to enclose the lighting fixtures because it will protect the lights against undesirable environmental conditions and mechanical damages.

Regarding Claim 7, Queisser et al do not disclose the apparatus of Claim 1 wherein the sample tray comprises a light-transmitting bottom. Bolle et al disclose a sample tray comprising light transmitting bottom (FIG. 4, Transparent support 405; Column 9, Lines 44-46). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Queisser et al invention according to the teachings of Bolle et al to provide a light transmitting (transparent) tray for supporting fruit particles in a matrix because it is a conventional method of illuminating materials on a translucent support routinely implemented in the art that will provide capability of illuminating the fruit particles in the tray for further image processing.

Regarding Claim 8, neither Queisser et al nor Bolle et al disclose the apparatus of Claim 2 wherein said apparatus further comprises a light box cover. Configuration of the internal parts of the cabinets is based upon the discretion of the designer. The cover for an internal component such as a light box is considered one of the basic elements in construction of the cabinets (Official Notice). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Queisser et al and Bolle et al combination to provide a cabinet with

Art Unit: 2623

cover for the light box because it will enclose components with distinct functions in separate segments and will protect the components against undesirable environmental conditions and mechanical damages.

Regarding Claim 9, Queisser et al further disclose an apparatus for measurement of the fruit particles in a matrix wherein the apparatus further comprises a sample tray guide (Figure 1; Column 4, Lines 10-14).

With regards to Claim 10, arguments analogous to those presented for Claims 1, 4, 6 and 7 are applicable to Claim 10.

Regarding Claim 13, Queisser et al do not disclose the process of Claim 12 wherein said illuminating of the fruit particles in a matrix is from below the sample tray, and said illuminating is therethrough in obtaining said image. Bolle et al disclose a produce recognition system wherein illuminating the particles in a matrix is from below the sample tray, and said illuminating is therethrough in obtaining said image (Figure 4, light source 110, transparent support 405; Column 9, Lines 39-51). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Queisser et al invention in accordance with Bolle et al teachings to illuminate the fruit particles in a matrix from below the sample tray, and the illuminating is therethrough in obtaining said image because it is a conventional method of illuminating materials on a translucent support routinely implemented in the art.

Regarding Claim 14, Bolle et al further disclose a produce recognition system wherein the illuminating is from below only (Figure 4, Light 110; Column 9, Lines 29-37. As depicted in

Art Unit: 2623

Figure 4, illuminating is from below only. The transparent support 405 is not illuminated both from above and from below.).

With regards to Claim 17, arguments analogous to those presented for Claim 13 are applicable to Claim 17.

With regards to Claim 18, arguments analogous to those presented for Claim 14 are applicable to Claim 18.

8. Claims 15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable by Queisser et al (U.S. 5,818,953) further in view of the background of the instant application and Sistler et al (U.S. 4,975,863).

Regarding Claim 15, Queisser et al do not disclose the process of Claim 12 wherein the placing occurs spatially between the illuminating location and the capturing location. Sistler et al disclose a system and process for analysis of particles wherein placing a sample tray occurs spatially between the illuminating location and the capturing location (Figure 5. Transparent plate 23 is located between light source 28 and camera 15.). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Queisser et al invention in accordance with Sistler et al teachings to place a sample tray spatially between the illuminating location and the capturing location because it is a standard procedure for holding the fruit particles for capturing the particles image routinely implemented in the art.

With regards to Claim 19, arguments analogous to those presented for Claim 15 are applicable to Claim 19.

Art Unit: 2623

9. Claims 16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable by Queisser et al (U.S. 5,818,953) further in view of the background of the instant application, Sistler et al (U.S. 4,975,863) and Bolle et al (U.S. 5,546,475).

Regarding Claim 16, neither Queisser et al nor Sistler et al disclose the process of Claim 15 wherein the illuminating has no source which is between the sample tray and the capturing location. Bolle et al disclose a produce recognition system wherein the illuminating has no source which is between the sample tray and the capturing device (Figure 4. As depicted in Figure 4, there is no illuminating source between Camera 120 and Tray 403.). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Queisser et al and Sistler et al combination in accordance with Bolle et al teachings to consider no illuminating source which is between the sample tray and the capturing device because it will simplify illumination system and will prevent scattered illumination problems.

With regards to Claim 20, arguments analogous to those presented for Claim 16 are applicable to Claim 20.

10. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable by Heck et al (U.S. 5,845,002) further in view of the background of the instant application and Sistler et al (U.S. 4,975,863).

Regarding Claim 1, Heck et al disclose an apparatus for measurement of the fruit particles comprising:

Art Unit: 2623

a substantially opaque cabinet (Figures 1 and 2a, optic housing 16; Column 7, Lines 65-67); a camera in the upper portion of said cabinet for taking an image of the fruit particles (Figures 1 and 2a, camera 30; Column 8, Lines 53-57); a light source in said cabinet (Figures 1 and 2a, light sources 22 and 24; Column 8, Lines 16-20); a device for holding the fruit (Figures 1 and 2a, inspection station 18; Column 7, Lines 65-67); and a computer with image analyzing software (Figure 1, computer 34; Column 9, Lines 6-21). Heck et al does not specifically disclose a sample tray adapted to receive fruit particles. Sistler et al disclose a particle examination system comprising a sample tray for supporting fruit particles (Figure 5, sample tray 23). Neither Heck et al nor Sistler et al disclose the sample tray adapted to receive a fruit matrix selected from a starch matrix or a sugar matrix, said fruit matrix used in fruit fillings or cooked food products. Measurement of the fruit particles in a matrix without removing the fruit particles from the matrix is well known in the art as disclosed in the instant application background (Page 2, Lines 3-14. The measurement has been performed for inspecting cooked fruit pieces containing food products, i.e., fruit particles in a matrix.). As indicated in the recited section of the background, camera and computer with analyzing software has been utilized for measurement of the fruit pieces containing in food products without having removed the particles from the matrix. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Heck et al and Sistler et al combination in accordance with the well known teachings of the background of the instant invention for taking an image of fruit particles and analyzing the image while the fruit particles are remaining within the fruit matrix, wherein the fruit

Art Unit: 2623

matrix is selected from a matrix used in fruit fillings, toppings, dairy products or cooked food products because it will expand the field of measurement to encompass a large variety of food products by merely utilizing a conventional method of measurement routinely implemented in the art.

Regarding Claim 2, Heck et al further disclose the apparatus of Claim 1 wherein said light source comprises a light box in the lower portion of said cabinet (Figures 1 and 2a, light sources 22 and 24).

Regarding Claim 3, Heck et al further disclose an apparatus for measurement of the fruit particles wherein the light source comprises an incident light source within the cabinet (Figure 2a, light sources 22 and 24).

Regarding Claim 4, neither Heck et al nor Sistler et al specifically disclose the apparatus of Claim 1 wherein the light source comprises switches for adjusting the intensity of the light. Light sources are inherently incorporated with switches for turning the lights on and off. Alternatively, utilizing switches for adjusting the intensity of a light in a predetermined range is extremely well known in the art (Official Notice.). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an apparatus for measurement of the fruit particles in a matrix wherein the light source comprises switches for adjusting the intensity of the light because it will provide the capability of obtaining different images of samples under various illumination conditions for enhancing image quality and increasing measurement accuracy.

Art Unit: 2623

Regarding Claim 5, Heck et al disclose the apparatus of Claim 1 wherein the light source comprises multiple light-producing sources (Figure 2a, light sources 22 and 24). Neither Heck et al nor Sistler et al explicitly disclose the apparatus of Claim 1 comprising independently-adjustable light-producing sources. Light sources are inherently incorporated with switches for turning the lights on and off. Alternatively, utilizing switches for adjusting the intensity of lights in a predetermined range is extremely well known in the art (Official Notice.). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide an apparatus for measurement of the fruit particles in a matrix wherein the light source comprises switches for adjusting the intensity of the light because it will provide the capability of obtaining different images of samples under various illumination conditions for enhancing image quality and increasing measurement accuracy.

Regarding Claim 6, neither Heck et al nor Sistler et al disclose the apparatus of Claim 1 wherein the inside of the cabinet is non-reflecting. Characteristics of the inside surface of a cabinet is the decision based upon designer's preference. Appropriate painting of the inside of a cabinet will result in a non-reflecting surface routinely practiced in the art (Official Notice). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a cabinet with non-reflecting inside surface because it will minimize light scattering inside the cabinet and will prevent degrading of the image quality due to light scattering.

Art Unit: 2623

Regarding Claim 7, Sistler et al further disclose the apparatus of Claim 1 wherein the sample tray comprises a light-transmitting bottom (Column 6, Lines 2-8).

Regarding Claim 8, neither Heck et al nor Sistler et al disclose the apparatus of Claim 2 wherein said apparatus further comprises a light box cover. Configuration of the internal parts of the cabinets is based upon the discretion of the designer. The cover for an internal component such as a light box is considered one of the basic elements in construction of the cabinets (Official Notice). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a cabinet with cover for the light box because it will enclose components with distinct functions in separate segments and will protect the components against undesirable environmental conditions and mechanical damages.

Regarding Claim 9, neither Heck et al nor Sistler et al disclose an apparatus for measurement of the fruit particles wherein the apparatus further comprises a sample tray guide. Configuration of the internal parts of the cabinets is based upon the discretion of the designer. Conventionally, cabinets are manufactured of modular parts. A cover with guides for installation of another component like a tray is considered one of the normal elements in composite modular structure of the cabinets, and has been frequently installed in electrical distribution boards (Official Notice). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a cabinet with a sample tray guide because it is the conventional part for the installation of the removable components.

Art Unit: 2623

With regards to Claim 10, arguments analogous to those presented for Claims 1, 4, 6 and 7 are applicable to Claim 10.

With regards to Claim 12, arguments analogous to those presented for Claim 1 are applicable to Claim 12. Sistler et al further disclose illuminating the food particles so that an image may be obtained in which food particles are distinguishable from the background (Column 3, Lines 16-22); capturing a computer-readable image of at least a portion of said illuminating fruit particles (Figure 1; Column 3, Lines 23-36); and using a computer and an image analyzing software program to analyze said image and obtain information concerning said fruit particles (Figure 1; Column 3, Lines 37-49).

Regarding Claim 13, Sistler et al further disclose the process of Claim 12 wherein said illuminating of the fruit particles in a matrix is from below the sample tray, and said illuminating is therethrough in obtaining said image (Figure 5; Column 6, Lines 2-8).

Regarding Claim 14, Heck et al further disclose the process of Claim 13 wherein the illuminating is from below only (Figure 2a, Lights 22 and 24. As depicted in Figure 2a, illuminating is from below only.).

Regarding Claim 15, Sistler et al disclose the process of Claim 12 wherein the placing occurs spatially between the illuminating location and the capturing location (Figure 5. Transparent plate 23 is located between light source 28 and camera 15.).

Art Unit: 2623

Regarding Claim 16, Heck et al further disclose the process of Claim 15 wherein the illuminating has no source which is between the sample tray and the capturing location (Figure 2a. There is no source between camera 30 and station 18 which is utilized as a supporting tray.).

With regards to Claim 17, arguments analogous to those presented for Claim 13 are applicable to Claim 17.

With regards to Claim 18, arguments analogous to those presented for Claim 14 are applicable to Claim 18.

With regards to Claim 19, arguments analogous to those presented for Claim 15 are applicable to Claim 19.

With regards to Claim 20, arguments analogous to those presented for Claim 16 are applicable to Claim 20.

Contact Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mehrdad Dastouri whose telephone number is (703) 305-2438.

The examiner can normally be reached on Monday through Friday from 8:00 a.m. to 4:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au, can be reached at (703)308-6604.

Any response to this action should be mailed to:

Commissioner for Patents
Washington, D.C. 20231

Art Unit: 2623

or faxed to:

(703) 872-9314 (for *formal* communications; please mark
"EXPEDITED PROCEDURE"); (for *informal* or *draft* communications, please
label "PROPOSED" or "DRAFT")

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to
the Group Receptionist whose telephone number is (703)305-4700.



Mehrdad Dastouri
Patent Examiner
Group Art Unit 2623
November 21, 2001